

A REVIEW OF THE GENUS *NEOBAPHION* BLAISDELL WITH
DESCRIPTION OF A NEW SPECIES FROM NEVADA
(COLEOPTERA: TENEBRIONIDAE: ELEODINI)

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Abstract.—A new species of *Neobaphion* is described and illustrated. A key is given to the three known members of the genus. The systematic position of the genus within the tribe Eleodini is discussed. Distributional data on each species are presented.

Blaisdell (1925: 390) proposed the genus *Neobaphion* to receive *Eleodes planipennis* LeConte, which became the type by monotypy. Suggesting placement "between *Eleodes* Esch. and *Embaphion* Say," Blaisdell characterized the genus by: "the [female] genital characters are embaphionoid and the body form that of an *Eleodes*." In the same paper, Blaisdell (loc. cit.) mentioned that "at least 3 new species have been studied, unfortunately as uniques, but all referable to the genus as given above [*Neobaphion*]," although these were not characterized (see below). The description of *Neobaphion* is only 8 lines long but is sufficient to validate the name.

Eleodine ovipositors are among the most specialized in the Tenebrionidae. Among some of the specialized characters mentioned by Tschinkel and Doyen (1980) are shortened ovipositor with dorsolateral gonostyles, paraprocts partly enclosing coxites, oblique orientation of baculi-1 (baculi of paraprocts); all characters are shared with the Opatrini. Furthermore, eleodines often have a complete fusion of coxites and an oblique orientation of baculi-2 (baculi of coxites); this combination of characters is apparently unique in tenebrionids.

To determine what is meant by Blaisdell's "embaphionoid" female genitalia, one must consult his 1909 revision of Eleodiini (p. 451) in which he describes "the genital segment [ventral view of coxites] triangular, or without the apices triangulo-trapezoidal, somewhat depressed; dorsal surface quite plane, not setose. Apices of the valves [coxites] produced, chitinous, more or less everted, convex above and concave beneath. Valves contiguous beneath; inferior pudendal membrane not visible. Genital fissure narrow and subapical. Superior pudendal membrane reaching to about the middle of the dorsal plates. Appendages [gonostyles] short mammiliform, with a pencil of rather long hairs at their tips." Blaisdell (1909) figures the female genitalia of five species of *Embaphion* (pl. 5, figs. 7, 8, 9, 14, & 20). On the same plate (fig. 6) he illustrates the genitalic structures of *Neobaphion planipenne* (placed in *Eleodes* in the 1909 revision).

We find no quarrel with characterizing *Neobaphion* as eleodine beetles with embaphionoid female genitalia and the body form of an *Eleodes*. Blaisdell had

enough information in 1933 (p. 210) to have mentioned also that all species of *Embaphion* have the lateral margins of the elytra sharply acute and at least slightly reflexed, but neglected to do so. All three of the *Neobaphion* species discussed herein have the lateral margins of the elytra rounded. Both males and females of *Embaphion* are easy to place to genus but males of *Neobaphion* could understandably pass for *Eleodes*. Blaisdell cautions repeatedly that his classification of Eleodini, particularly the subgeneric arrangement, is based primarily on the female genitalia.

All species of *Embaphion* have the pronotal margins moderately (*E. depressum* LeConte) to strongly (*E. muricatum* Say) sharply margined and reflexed. This character will not separate all *Eleodes* from *Embaphion* since several species of *Eleodes* have either the pronotum, the elytra, or both sharply margined and reflexed (i.e. *E. opacus* (Say), *E. veterator* Horn, *E. acutus* (Say), *E. suturalis* (Say), et al.). Sharply margined elytra thus occur in at least 3 subgenera of *Eleodes*.

Both La Rivers (1948: 98) and Tanner (1961: 58) attempted keys to the genera of Eleodini based on external characters. Both keys are a decided improvement over that of Blaisdell (1909: 29). The Tanner key was slightly modified by Arnett (1960: 654). Since these keys are readily available they will not be repeated here. None will work perfectly, but they are the best available.

La Rivers (1948: 98) considered *Neobaphion* a subgenus of *Eleodes*. At present we prefer to retain them as separate genera, acknowledging that they are very closely related, until the problems of *Eleodes* subgenera are better understood. These problems will not be resolved until the Mexican eleodine fauna is thoroughly studied, a project now underway by the senior author. Any speculation on generic or subgeneric relationships at this time would be premature.

In a recent shipment of miscellaneous Tenebrionidae sent to us by Fred G. Andrews (Laboratory Services, California Dept. of Food and Agriculture, Sacramento) for identification, the following interesting new species was found.

***Neobaphion papula* Triplehorn and Aalbu, NEW SPECIES**

Fig. 1

Holotype, female: Length: 15.8 mm; width: 6.4 mm. Body elongate, slender, subopaque, black.

Head subquadrate, $\frac{6}{7}$ as long as broad, flattened; clypeal suture entire, epistomal margin truncate; surface dull, with numerous fine, rounded tubercles, each bearing a short pale seta at apex; eyes moderately small, narrow, slightly reniform, dorsal lobe larger, more rounded than ventral lobe; antenna relatively short, stout, apical 6 segments moniliform; ratio of lengths of antennal segments (from base to apex): 17:7:23:13:11:10:10:10:10:11:12.

Pronotum $\frac{5}{6}$ as long as broad, broadest anterior to midlength, with 2 slight depressions medio-laterally behind midlength; in dorsal view, lateral margins strongly arcuate, marginal bead narrow, finely denticulate from base to apex; anterior margin broadly, shallowly concave, very slightly sinuate medially, angles slightly acute, prominent; base nearly straight, angles obtuse; disc strongly convex from side to side, surface with tubercles similar to those of head but larger, moderately dense to dense, with a short seta originating on caudal side of each tubercle.

Scutellum triangular, rounded caudally, finely sculptured.

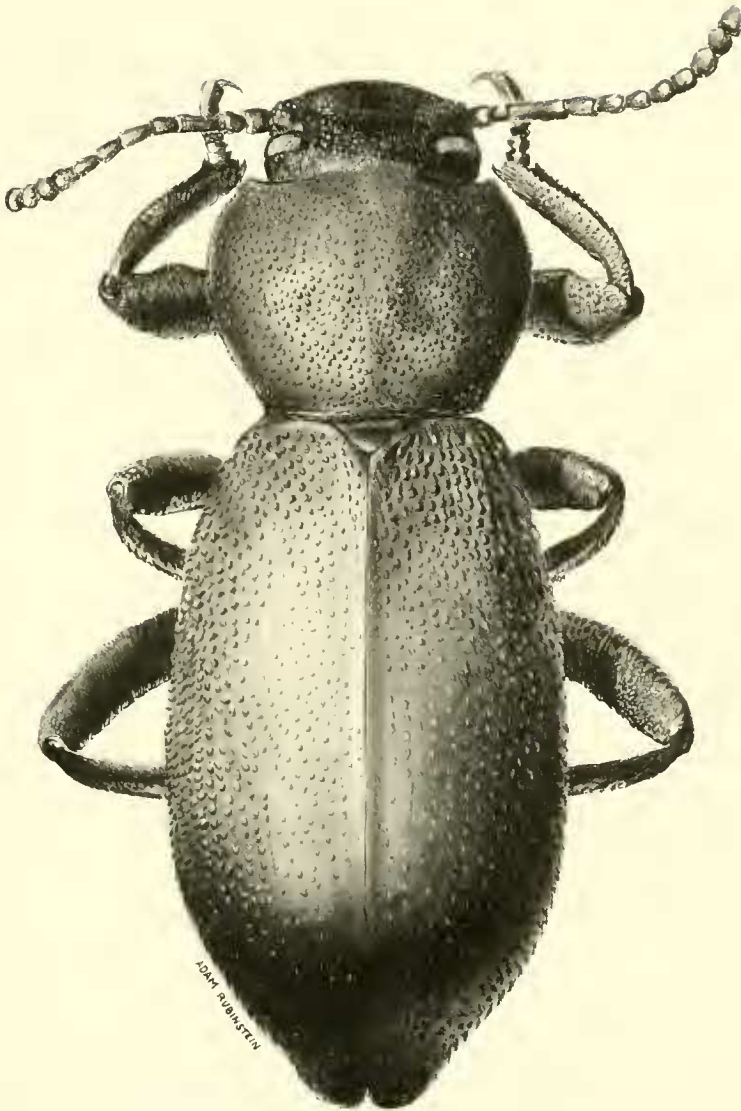


Fig. 1. *Neobaphion papula* Triplehorn & Aalbu. Habitus, female.

Elytra flattened on disc, at suture turned sharply upward, forming a distinct keel extending from apical declivity toward base, diverging anteriorly to enclose scutellum; sides subparallel, widest behind midlength, abruptly deflexed posteriorly with caudal lobe not pronounced; base slightly concave with humeri obsolete (epipleural base not visible dorsally); surface with dense, conspicuous muricate punctures, each with a short pale seta directed caudally, muricate punctures larger, closer and more confusedly distributed laterally, longitudinal serial arrangement somewhat evident discally.

Legs moderate in size, finely, densely, muricately punctate; profemur slightly emarginate subapically; protibial spurs about equal; basal protarsomere with dense

tuft of golden setae interrupting plantar groove. Ventral surface alutaceous with coarse, dense tubercles on ventral side of prothorax, less coarse on meso- and metasternum, finer, less dense on basal 3 abdominal sterna, smaller, scarcely evident on apical and subapical sterna; prosternal process acute, slightly declivous then mucronate behind coxae, prominent. Genital segment with coxites fused, coxites 1 & 2 triangular in outline ventrally, concave, dorsally convex, coxite segments 3 & 4 forming a strongly sclerotized spatulate process, divergent and acute apically; gonostyle minute with single long apical seta.

Allotype, male: Similar to female but slightly smaller and more slender. Emargination of profemur more pronounced. Length: 14.9; width 5.2 mm.

Variation.—“Keel” formed along elytral suture varies slightly in magnitude and is not always so strong at base. It frequently does not diverge to enclose scutellum. Otherwise, type series quite uniform. Fifty specimens examined: Length: 11.9–17.2 mm; width: 4.2–6.4 mm.

Diagnosis.—This moderately small species can easily be separated by the presence of the medial keel on the elytra, the densely, finely tuberculate head and pronotum and the finely denticulate marginal bead of the pronotum.

Types.—*Holotype* (♀) and 4 *paratypes*: NEVADA, Mineral County, Teels Marsh sand dunes, 7-VI to 31-VIII-1980, antifreeze pit trap on sand dune, D. Giuliani col.; allotype (male) and 36 *paratypes* same data except 22-IX-1979 to 30-I-1980; 5 *paratypes*: same data except 17-II to 16-VII-1979; 1 *paratype*: same data except 20-V-1973 [not in pit trap]; 2 *paratypes*: NEVADA, Esmeralda County, Clayton Valley Dunes, 17-IX-1974, F. G. Andrews and A. R. Hardy cols. Holotype and allotype deposited in California Academy of Sciences Collection, San Francisco (CASC); *paratypes* in California Department of Food and Agriculture, Sacramento (CDAE); Nevada Department of Agriculture, Reno (NSDA); The Ohio State University Collection of Insects and Spiders, Columbus (OSUC); and Rolf L. Aalbu Collection (RLAC).

Etymology.—The name *papula* means pimple and is treated here as a noun in apposition.

DISCUSSION

In 1933 (p. 208), Blaisdell described *N. elongatum* from the male holotype (Yerrington [sic], Nevada, July–August, 1908, California Academy of Sciences type No. 3718). He also listed another male *paratype* from “Constantia, Nevada” collected by Geo. Haley, which we assumed was also in the California Academy collection. *N. elongatum* is perhaps at least one of the “new species” [of *Neobaphion*] mentioned in Blaisdell’s 1925 paper (p. 390).

Through the courtesy of David H. Kavanaugh and Gary L. Peters, we were able to study the holotype of *N. elongatum* plus two additional specimens determined by Blaisdell as that species and not heretofore mentioned in the literature. The two are labelled “Plms Jn. Cal.,” 20 June, 1905 and are originally from the A. Fenyes Collection. The “Constantia, Nevada” specimen could not be located by Kavanaugh and Peters.

More recently, one of us (C.A.T.) discovered a “Constantia, Nevada” specimen of *N. elongatum* and another labelled “Plms Jn. Cal.,” in the Ira La Rivers Collection, now housed at the Nevada Department of Agriculture in Reno. The

Constantia specimen is almost certainly the one Blaisdell designated a paratype although it is not labelled as such.

Dr. Robert C. Bechtel (Nevada Department of Agriculture in Reno) not only allowed us to borrow the two above-mentioned specimens but provided valuable information on the two localities we were unable to locate. The abbreviation "Plms Jn." undoubtedly stands for Plumas Junction and *Constantia* is in California rather than in Nevada. Both localities are in the narrow corridor of Lassen County, California between Plumas County, California and the California-Nevada state line, separated by a distance of about 13 kilometers. Plumas Junction is about 8.5 km N.N.W. of Halleluja Junction and was located on an old California map found by Bechtel.

Finally, one more specimen of the rare or elusive *N. elongatum* was found by one of us (R.L.A.) in a previous shipment of cryptoglossines (also from California Department of Food and Agriculture), mixed with specimens of *Centrioptera muricata* LeConte which is superficially similar in dorsal view. This specimen, a female, was collected under a rock in Lander County, Nevada, New Pass Summit (6348'), 1-V-1978, by Alan R. Hardy and Fred G. Andrews.

Thus *N. elongatum* is known from only six specimens (two males, four females), all of which we have on hand as this is written. These vary only slightly in size (males: 17–19.9 mm long, 5.7–6.5 mm wide; females: 18.1–19.9 mm long, 6.5–7.4 mm wide), sculpture and luster. The females (which were unknown to Blaisdell) do not have the metatibia expanded in the apical half as in the male. The lateral pronotal margins of the holotype are slightly more explanate than in the other specimens.

Neobaphion planipenne LeConte, the type of the genus, is widespread and locally abundant in New Mexico, Arizona, southwestern Colorado and southern Utah.

The three species of *Neobaphion* may be separated by the following key.

KEY TO ADULTS OF *NEOBAPHION*

1. Head and pronotum densely, finely tuberculate; lateral marginal bead of pronotum finely denticulate; elytra raised along suture to form a distinct keel extending from scutellum to apical declivity *papula* new species
- Head and pronotum with simple punctures, at least on disc (lateral areas may have a few scattered tubercles); lateral marginal bead of pronotum smooth; elytra flattened on disc 2
2. Prosternal process deflexed behind procoxae, not prominent; base of pronotum much narrower than base of elytra; pronotum in dorsal view with lateral margins narrowly but distinctly constricted near base; metatibia similar in the sexes *planipenne* (LeConte)
- Prosternal process mucronate, acute and prominent behind procoxae; base of pronotum only slightly narrower than the base of elytra; pronotum in dorsal view with lateral margins scarcely or not constricted basally; metatibia of male slender in basal half, abruptly expanded and parallel-sided apically, that of female unmodified *elongatum* Blaisdell

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